MOUNTAIN HOME DEMONSTRATION STATE FOREST NEWSLETTER

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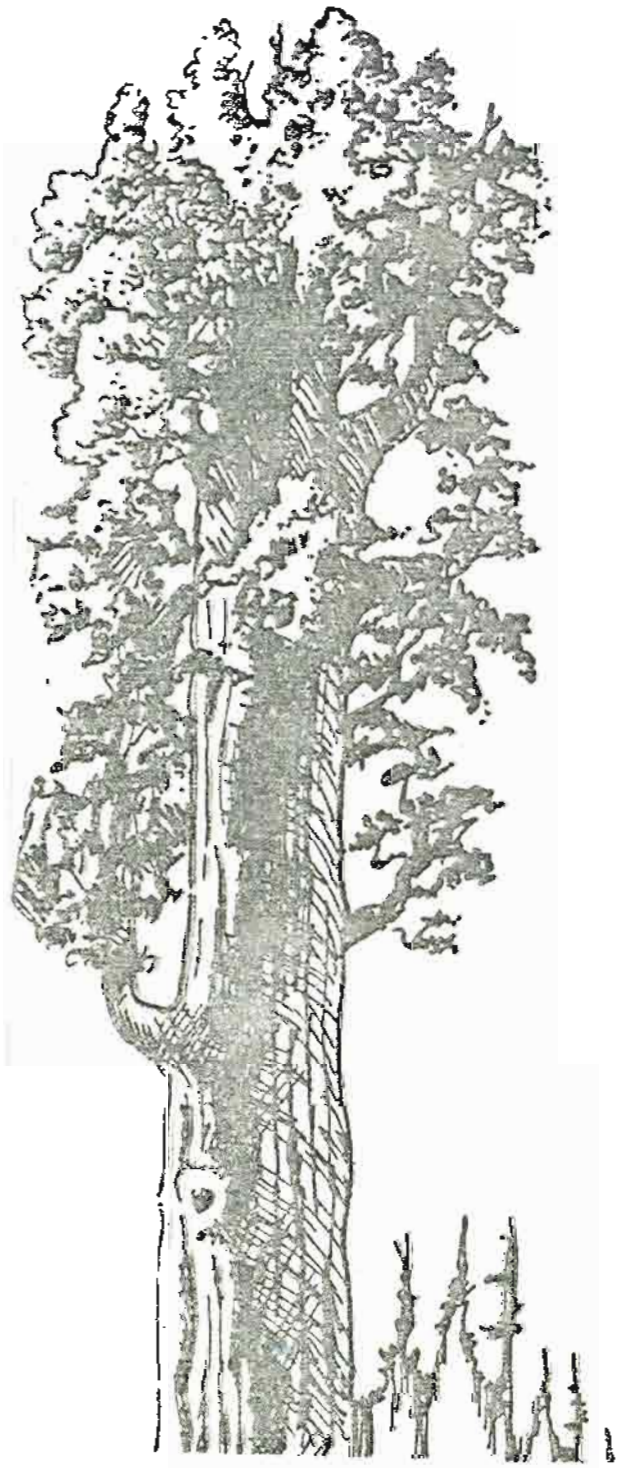

MOUNTAIN HOME DEMONSTRATION STATE FOREST'S OLDEST TREES

The most frequently asked question of visitors to Mountain Home, when viewing our magnificant groves of old growth Sierra redwood, is: "How old are some of those giant trees?" This question is a most difficult one to answer and has resulted in much exaggeration in the past. Some rather optimistic and grossly inaccurate estimates of ages up to 10,000 years old have been reported from early accounts of these big trees. Estimates of age of living trees is difficult at best. Increment borings, with even the longest borers available, sample only the outer ring of wood on large trees. Some overestimates of age in the past have been made by taking the ring count in a given length of boring from the outer portion of the tree and applying that proportion to the entire diameter. These estimates did not take into account the fact that trees slow down in diameter growth as the trees get older. Other variables also influence ring width.

Ring width may fluctuate greatly for a given period within the tree's life span. It is well known that tree growth and ring width are influenced by climate, especially rainfall. It can also be influenced by competition from other nearby vegetation and from the amount of live crown on an individual tree. Analysis of growth rings on a recently salvaged windthrown Sierra redwood in the State Forest showed an interesting pattern. Every few hundred years the ring width would dramatically decrease then slowly increase in size for a few more hundred years before decreasing again. The tree was located high up on a ridge where lightning occurrence is high. It is hypothesized that every few hundred years lightning would hit the top of the tree destroying a portion of the crown. This would dramatically decrease the growth and the ring width.

The tree would slowly recover, grow a new top, increase the amount of foliage in the crown, and show a progressive increase in ring width. This would occur until the tree was once again hit by lightning with the crown partially destroyed, and the growth rate was set back again.

Age is also not proportional to size of individual trees. Sierra redwood exhibit great differences in growth rates between trees, especially on different sites. Trees varying in diameter by as much as ten feet may be the same age because of differences in growth rates. The largest of Sierra redwoods, the General Sherman tree, has recently been estimated to be 2500 years old using a basal area to age proportion method. A very large 25 foot diameter windfall in the Calaveras Grove has proved to be only 1300 years old. This compares to much smaller trees with known ages of over 3000 years.

The only accurate estimates of age of Sierra redwoods have been made from ring counts on stumps and fallen dead trees. Tree ring studies on trees and stumps in the Mountain Home area were made as early as 1911 by Ellsworth Huntington and in 1918-1925 by A. E. Douglass. Most of the tree ring counts made in these trees proved to very old, with several over 3000 years. One of the oldest Sierra redwood on record was labeled "D-22 by Douglass and was 3020 years old before being cut in 1900. Ring counts on the stump of "D-22 go back to the year 1120 B.C. More recently, tree ring counts of redwoods in the State Forest were made by John McCracken of the University of Washington. McCracken found stumps and fallen trees with ages up to 2500 years old. These tree ring counts are tedious to accomplish, to say the least. They are also complicated by missing rings and microscopic rings not visible to the naked eye.

From this scientific work and from casual tree ring counts, some general conclusions about the ages of Sierra redwood can be made. Trees older than 2500 years are rare and a tree older than 3000 years would rank as one of the all time veterans. It appears that the average age of the large old growth trees would be in the range of 1500-2000 years. The Sierra redwood are definitely not the oldest living trees. The bristlecone pines with ages up to and exceeding 4000 years have that honor.

So the answer to that question: "How old is that Sierra redwood tree?" must be a cautious estimate based on tree size, condition and site. The positive answer will not be known until that tree dies and accurate ring counts made, and that may be thousands of years from now!

HIGH WINDS TOPPLE TREES

On November 30, 1982 winds blew through central and southern California leaving a wake of destruction. Hurricane force winds were recorded. These gusts blew down powerlines and trees causing outages, property damage, and frustrating traffic.

The winds blew through the Mountain Home area knocking down trees and leaving parts of the forest looking like giant jack straws. The forest staff immediately went out into the field to survey the damage, find out how much timber was down, and plan salvage efforts. Much of December 1982 was spent in cruising the down timber, marking trees for removal, and making general plans so that the timber could be salvaged in 1983. Because of a moderate snow cover, much of this work was done on skis or snowshoes.

This timber is important to salvage not only for its economic value. These down trees constitute a fire hazard and may cause a build up of undesirable insects and disease. Insects such as western and mountain pine beetles, pine and fir engravers, and various wood borers may use these trees to breed and could build up to epidemic populations. These insects usually attack unhealthy trees through the bark, mining the cambial layer between the bark and wood to lay their eggs. The young larvae develop and further mine the cambial area. The effect is a girdling of the tree which kills it. During epidemics the insects will attack and kill healthy trees. These insects also introduce fungi which destroys and degrades the wood. If we remove the potential breeding areas we lessen the chance of large outbreaks of tree killing beetles and other insects.

This windthrown timber was sold by sealed bid to Sierra Forest Products of Terra Bella for a total value of $13,431.89. The total volume of timber removed during salvage efforts in 1983 totaled 695,570 board feet.

In addition to the timber described above, many old growth Sierra redwoods were toppled in the storm. Twelve old growth veterans have been found as victims to the storm. With a total of over 4500 old growth Sierra redwood trees on the forest, we expect to lose 1-2 trees per year from natural causes. This severe windstorm created unusual circumstances with losses much greater than an average year. Two of these trees fell across roads and have been salvaged by crews from the Mountain Home Conservation Camp. The rest of the trees will be measured and evaluated for their commercial, recreational, and scientific value.

RECREATION VISITOR USE FIGURES TALLIED

Visitor use figures for 1983 have been tabulated with a total of 17,540 camper days recorded for the summer season. This number is the lowest since 1976 when 16,581 camper days were tallied. This compares to the record setting year of 1982 with 21,219 camper days. This reduction in use in 1983 was directly related to the late opening of the forest due to the heavy snow accumulations. No camping facilities were open for Memorial Day weekend and it was the 4th of July before all camping units were accessible. Once the camping season started, visitor use figures equalled or exceeded those of 1982.

Despite this last year of low use, the trend in recreational use is expected to continue upward. Projections based on trends from 1958 to 1982, are that the camper use will double by the year 2006, just twenty two years away. Below is a table showing our projected usage in the future:

1990 ... 28,750 camper days
2000 ... 37,000 camper days
2010 ... 45,250 camper days
2020 ... 53,500 camper days

Predictions become less accurate the further out into the future one goes. However, we feel that our camper and visitor use will increase as other forms of recreation become more expensive and people feel the urge to "get away from it all".

Mountain Home Demonstration State Forest currently has 100 campsites and according to our projections these facilities will reach a saturation point in the early 1990's at a level of 30,000 camper days. At this level of use with our existing facilities, holiday use would be over-capacity, regular weekend use would be at 100% of capacity, and weekday use would be at 50% capacity from Memorial Day weekend through Labor Day.

We are currently planning ahead to this point in time and looking at different management alternatives which we can accomplish to meet the needs of this increasing recreational demand.

1983 FOREST STAFF

David Dulitz - Forest Manager

Norman Benson - Assistant Forest Manager

Rainey Young - Fire Crew Supervisor

Dorothy Stangl - Archeological Specialist (seasonal)

Loren Henricks - Recreation Aide (seasonal)

Phyllis Banducci - Forestry Aide (seasonal)

Ron Sjostedt - Forestry Aide (seasonal)

Theresa Duricek - Forestry Aide (seasonal)

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Do you know of anyone who would like to receive our newsletter? If so, fill in the information below and send to Mountain Home Demonstration State Forest, P.O. Box 517, Springville, CA 93265.

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Name Address

_____ _____ _____

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